



US Army Corps
of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Public Notice

Public Notice Number: SPK-2007-01068

Date: August 17, 2007

Comments Due: September 17, 2007

In reply, please refer to the Public Notice Number

SUBJECT: The U.S. Army Corps of Engineers, Sacramento District, (Corps) is evaluating a permit application to construct the Folsom Dam Safety and Flood Damage Reduction project, which would result in impacts to approximately 75 acres of waters of the United States, including 2.01 acres of wetlands, in or adjacent to Folsom Dam and Reservoir. This notice is to inform interested parties of the proposed activity and to solicit comments. This notice may also be viewed at the Corps web site at <http://www.spk.usace.army.mil/regulatory.html>.

APPLICANT: U.S. Bureau of Reclamation
ATTN: Shawn Oliver
Central California Area Office
7794 Folsom Dam Road
Folsom, CA 95630

LOCATION: Folsom Dam and Reservoir are located at the confluence of the North and South Forks of the American River. This reservoir straddles Placer, Sacramento, and El Dorado Counties, in the State of California. The table below provides the township and range for the location of the proposed project.

USGS 7.5 Quad Minute Map Name	Township	Range	Meridian
Folsom Quadrangle	10 N	7 E & 8 E	Mt. Diablo
Clarksville Quadrangle	10 N	8 E	Mt. Diablo

PURPOSE: The purpose of the Folsom Dam Safety and Flood Damage Reduction (Folsom DS/FDR) Project is to improve overall public safety and flood damage reduction by:

1. Addressing hydrologic (flood), static (seepage), and seismic (earthquake) issues associated with Folsom Dam (Main Concrete Dam), Right Wing Dam (RWD), Left Wing Dam (LWD), Dikes 1 through 8, and Mormon Island Auxiliary Dam (MIAD), referred to collectively as the Folsom Facility,
2. Improving the release capacity of the Folsom Facility for flood damage reduction; and,
3. Improving the ability of the Folsom Facility to withstand large flood events.

As a part of their responsibilities, the applicant and the Corps have determined that the Folsom Facility requires structural alterations to increase overall public safety above existing conditions by modifying the facilities' ability to reduce flood damages and address dam safety issues posed by hydrologic, seismic, and static events at the Folsom Facility. Large floods and earthquakes have a low probability of occurrence in a given year; however, due to the large population downstream of Folsom Dam, modifying the facilities is prudent and required to reduce the risks to the public.

The Corps, in partnership with the non-federal sponsors, has determined that Folsom Reservoir does not have sufficient release capacity to adequately manage severe flood flows nor do the downstream levees have

sustained capacity to exceed base flood event flows of 145,000 cubic feet per second (cfs). The goal of non-federal sponsors is to safely pass the 200-year computed design event as a minimum objective as projected in the Congressionally authorized Folsom Dam Modifications and Folsom Dam Raise projects. Pursuit of this goal constitutes non-federal sponsors' primary interest for participating in the Folsom DS/FDR actions.

Failure of gates controlling releases from the main dam could result in the release of significant quantities of water that could cause flooding and possible failure of the downstream levees. The types of modifications proposed to enhance dam safety include the bracing and strengthening of the spillway piers and spillway gates. These modifications do not impact jurisdictional wetlands or other waters and consequently do not require a 404 permit but are included for explanatory purposes.

PROJECT DESCRIPTION: The selected action for the Folsom DS/FDR Project incorporates three action elements proposed to be implemented by the applicant. In addition, the Corps is responsible for other aspects of the Folsom DS/FDR Project that would be incorporated jointly and separately from the applicant's proposed projects. A complete description of the elements of the project that would be conducted by the applicant and the Corps can be found in the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/Environmental Impact Report (DS/FDR EIS/EIR), dated March 2007, which is available online at: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1808.

1. The applicant is proposing to initiate construction of a new Auxiliary Spillway, which would be completed by the Corps. The proposed Auxiliary Spillway is proposed to be controlled by 6 submerged tainter gates (6 STG). The Auxiliary Spillway, also referred to as the Joint Federal Project (JFP), would address hydrologic Dam Safety and Flood Damage Reduction concerns related to controlled release of water from Folsom Reservoir. The applicant and the Corps jointly identified the final environmental mitigation requirements and commitments for the new Auxiliary Spillway element under a joint Record of Decision (ROD) dated May 4, 2007. Construction of the JFP Auxiliary Spillway is included as an action to be addressed as part of this 404 permit application.
2. The applicant proposes to construct Dam Safety modifications to address seismic concerns related to the Main Concrete Dam; static concerns on the RWD, LWD, MIAD, and the Dikes 4, 5, and 6; and additional seismic concerns on MIAD. For the Main Concrete Dam, the applicant proposes to strengthen the spillway gates and pier structures. For the RWD, LWD, MIAD and dikes, a new filter zone will be installed. For MIAD, the foundation will be strengthened by using a jet grouting process and installing an additional downstream earthfill overlay. The final environmental mitigation requirements and commitments for this effort were identified by the applicant under the Safety of Dams Record of Decision (ROD) dated May 4, 2007. The applicant's Dam Safety actions are included as a component of this 404 permit application.
3. The applicant also proposes to install additional Security features (towers with cameras) at the main dam and several of the earthen structures to address national security concerns. The final environmental mitigation and commitments for this effort were identified by the applicant under the Safety of Dams ROD dated May 4, 2007. These security features will be installed in areas previously disturbed and do not involve a discharge of dredge and/or fill material into waters of the United States and therefore are not included as a component of this 404 permit application.

The following sections describe the portions of the project that will fall under this 404 permit application.

Auxiliary Spillway – JFP: The proposed JFP Auxiliary Spillway would involve the construction of a discharge channel with gated control structure downstream of the toe of the LWD. The entire discharge channel would be comprised of an approach channel, gated control structure, concrete-lined spillway channel and stilling basin. The JFP Auxiliary Spillway would provide operational capability for improved hydrologic control (controlled sustained discharge earlier and for longer durations and/or prevention of overtopping) of storm induced floods in excess of reservoir storage capacity in advance of and during a major storm. The new Auxiliary Spillway would be constructed jointly by the applicant and the Corps. The applicant proposes to initiate excavation of the spillway channel and stilling basin. The

Corps would then complete excavation of the spillway channel, construct the control structure, line the channel with concrete, complete construction of the stilling basin, and excavate the approach channel.

Common (soil) material and rock excavated from the JFP Auxiliary Spillway channel would be hauled eastward on government property for temporary stockpiling and/or permanent disposal of excess material. These locations include the following:

1. At or near the downstream toe of the LWD.
2. Overlook Point area.
3. Areas along the haul route from the LWD to MIAD (roadbed fill).
4. Upstream of Dike 7.
5. In the D1/D2 area near MIAD.
6. Areas north and south of Beal's Point.
7. Downstream of Dike 5 (temporary stockpile only).

Although not part of the JFP, the temporarily stockpiled material would be used for the proposed dam safety modifications (See Dam Safety Modifications below) including construction of a downstream overlay at MIAD and various staging platforms. The proposed Auxiliary Spillway would involve the discharge of approximately 600,000 cy of material into 3.001 acres of waters of the U.S., including wetlands.

Dam Safety Modifications: To address seismic and static concerns for structures comprising the Folsom Facility, the applicant is proposing to construct modifications to the Main Concrete Dam, the RWD and LWD, Dikes 4, 5, and 6, and MIAD.

To address seismic concerns for the Main Concrete Dam, modifications are proposed to reinforce the existing spillway gates and piers to prevent failure in the event of a major earthquake.

To address seismic concerns for MIAD, two types of modifications are proposed to be constructed. The first modification involves stabilization of the foundation of MIAD using a subsurface jet grouting process. A cement-grout mixture would be formed on-site using a cement material hauled to the MIAD project site and mixed with water. The cement water mixture would be injected into the subsurface by a drilling method and would solidify in place. Following jet grouting, material excavated from construction of the new Auxiliary Spillway and stockpiled at the D1/D2 area would be placed along with processed sand and gravel material as an overlay on the downstream face of MIAD.

To address static concerns for RWD, LWD, Dikes 4, 5, and 6, and MIAD, the applicant is proposing to install new seepage control filters within the downstream face of each earthen structure. The filter zone is comprised of sand and gravel material that would be delivered to each individual dike from an offsite supplier. The shell zone would be obtained for Dikes 4, 5, and 6 using in-reservoir materials. The modifications involve stripping a layer of shell material from the downstream face of the wing dams and dikes, placing the filter material, and replacing the shell. Additional material needed to rebuild the shells would be taken from supplemental borrow sites developed from within the reservoir or from stockpiles developed during construction of the new Auxiliary Spillway.

The proposed project would involve the discharge of 300,300 cubic yards of granitic material into 75 acres waters of the U.S, including wetlands. Approximately 1,300 cubic yards of the total amount of fill would be placed temporarily at Dike 7. The remainder of the fill would be permanent.

ADDITIONAL INFORMATION: The Folsom Dam Safety and Flood Damage Reduction Draft and Final EIS/EIR, the Folsom Dam Safety of Dams and Security Upgrades Projects ROD, and the Folsom Dam Safety and Flood Damage Reduction Joint Federal Project ROD may be viewed at http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1808.

Placement of Fill: The applicant's engineering design refinements since the Final EIS/EIR estimate approximately 2,500,000 cubic yards of material is proposed to be excavated during construction of the JFP Auxiliary Spillway. This material would be temporarily or permanently placed in and around the reservoir for staging areas, stockpiling, haul roads, and permanent disposal sites. The location of the potential within-reservoir discharge sites will be at the Overlook Point (CSALWDE) parking lot, the area directly upstream of Dike 7 (CSAD7N), and areas north (CSAD6E) and south (CSARWDN) of Beal's Point.

Construction of the JFP Auxiliary Spillway, Dikes 4, 5, 6, RWD and LWD, and MIAD, as well as construction of haul roads within the reservoir (from the LWD to MIAD and Beal's Point to Dike 4) have the potential for filling waters of the U.S., including wetlands. These include isolated seasonal wetlands, small seasonally ponded areas, and reservoir water below 466 feet elevation.

Affected Wetlands: The Folsom JFP and Dam Safety actions are expected to impact 2.01 acres of jurisdictional wetlands.

Indirect Impacts to Wetlands: Jet grouting at MIAD could indirectly affect wetlands downstream of MIAD and in the Mormon Island Wetland Preserve. Water quality impacts may occur from the materials used in jet grouting. Additionally, seepage through the foundation underlying MIAD may be a partial water source for the wetlands. Jet grouting would solidify the foundation of MIAD and could reduce the water source to the wetlands. Mitigation measures are described in the Mitigation section below.

Area Description: The Folsom Facility is located approximately 23 miles northeast of Sacramento, near the City of Folsom, in the State of California. There are 12 retention facilities (4 dams and 8 dikes) that make up the Folsom Facility. These retention structures impound the waters of the North and South Forks of the American River forming Folsom Reservoir. The Folsom Facility is a multi-purpose facility operated by law to provide flood control, irrigation water supply, municipal and industrial (M&I) water supply, and hydropower generation benefits. Additional purposes with notable associated benefits include recreation and maintenance of water quality for fish and wildlife.

The Folsom Facility was constructed by the Corps during the period of 1948 to 1956. As required by the original legislation, ownership of the Folsom Facility was transferred to the applicant upon construction completion for operation and maintenance as an integrated feature of the Central Valley Project (CVP).

On June 5, 2007, the applicant submitted a wetland delineation, in which they stated that there are approximately 11.6 acres of wetlands and 302.8 acres of other waters of the U.S. within the proposed project area. This wetland delineation has not yet been approved by the Corps. Therefore, the amount of proposed impacts to wetlands and other waters of the U.S. is preliminary pending approval of the wetland delineation.

Alternatives: In the Folsom Dam Safety and Flood Damage Reduction Draft EIS/EIR, dated December 2006, five alternatives were considered to meet the purpose and needs of the Folsom DS/FDR Project. Alternative 3, the preferred alternative, was optimized in the Final EIS/EIR, dated March 2007.

Alternative 1 –Fuseplug Auxiliary Spillway

Alternative 1 would involve construction of an Auxiliary Spillway using a fuseplug as the control structure. This alternative addressed the applicant's dam safety hydrologic objectives and remains an option of the Safety of Dams ROD. The applicant would implement construction of the fuseplug spillway only should the Corps be unable to complete construction of the 6 STG control structure or other elements of their assigned work package, within established schedules, and only after consultation with the Corps and other Partner Agencies. Alternative 1 includes all of the static, hydrologic and seismic modifications for the Main Concrete Dam, RWD, LWD, Dikes 4, 5, and 6, and MIAD described above.

Alternative 2 – Fuseplug Auxiliary Spillway with Tunnel

Alternative 2 included a Fuseplug Auxiliary Spillway with a gated tunnel. Alternative 2 primarily addressed the applicant's dam safety hydrologic risk reduction objectives. Alternative 2 includes all of the static, hydrologic and seismic modifications for the Main Concrete Dam, RWD, LWD, Dikes 4, 5, and 6, and MIAD, with the exception that the seismic risk of the MIAD foundation would be addressed through excavation and replacement of the downstream foundation, and not through jet grouting.

Alternative 3 (Preferred Alternative) – JFP Auxiliary Spillway

Alternative 3 was identified in the Final EIS/EIR as the applicant's preferred alternative to address hydrologic, static, and seismic risk and by the Corps as a component of its Selected Plan. Alternative 3 includes the construction of a new 6 STG Auxiliary Spillway. Alternative 3 includes all of the static, hydrologic and seismic modifications for the Main Concrete Dam, RWD, LWD, Dikes 4, 5, and 6, and MIAD as described above. The applicant has stated that Alternative 3 is the environmentally preferred/least environmentally damaging practicable alternative.

Alternative 4 – 7-ft Raise with JFP Auxiliary Spillway

Alternative 4 included a JFP Auxiliary Spillway along with a 7-ft raise of all 12 Folsom Dam structures. Alternative 4 would address both the applicant's and the Corps' hydrologic control objectives for the Folsom Facility. Alternative 4 includes all of the static, hydrologic and seismic modifications for the Main Concrete Dam, RWD, LWD, Dikes 4, 5, and 6, and MIAD described above.

Alternative 5 – 17-ft Raise

Alternative 5 used a 17-ft raise to contain flood waters and did not involve construction of a new Auxiliary Spillway. Alternative 5 includes all of the static and seismic modifications for the Main Concrete Dam, RWD, LWD, Dikes 4, 5, and 6, and MIAD, with the exception that foundation issues at MIAD would be addressed through excavation and replacement of the downstream foundation, and not through jet grouting. Additionally, hydrologic control would be achieved through reservoir capacity, not a spillway.

In addition to the alternatives described above, several alternative measures addressing static, hydrologic and seismic concerns for all 12 structures comprising the Folsom Facility were considered during the screening process. These included installation of shear keys for the main dam foundation and placement of filters of various configurations for the earthen structures. These alternative measures were eliminated from further consideration for various reasons including technical and economic feasibility.

Mitigation: Mitigation for impacts to these listed species will occur in the manner outlined in the USFWS Biological Opinion for the project:

The applicant will mitigate for the loss of 1.2 acres of seasonal wetlands by developing 4.7 acres of seasonal wetland habitat, and will mitigate for the loss of 42.7 acres of riparian woodland habitat by developing 48 acres at sites approved by the USFWS, as recommended in the Fish and Wildlife Coordination Act Report for the project. Final mitigation requirements for impacts to other waters of the United States will be determined through the CWA 404 permitting process.

As a result of the construction work at MIAD, the applicant will: Develop a monitoring and adaptive management plan with the USFWS to monitor the hydrology and vegetation at Mormon Island Preserve. Establish baseline and monitor for 6 months following construction. Implement adaptive management mitigation to return effected systems to baseline conditions if necessary.

Bio-assessment studies will be conducted prior to, during, and after jet grouting of the MIAD foundation to monitor aquatic resources. Other mitigation measures related to jet grouting of the MIAD foundation include:

1. Line all temporary jet grout solidification areas with an impervious material that does not allow the migration of any construction-related wastes.
2. Monitor surface and groundwater levels and water quality prior to, during, and after jet grouting of MIAD. Inspect all wetlands near jet grout injection that could be impacted by construction for the presence of grout at a frequency of once per hour. Delineate wetlands downstream of MIAD prior to jet grouting using flagging.
3. No equipment will be staged within 25 ft of a wetland that has not been mitigated for, nor will work take place within 25 ft of a wetland that has not been mitigated for.

OTHER GOVERNMENTAL AUTHORIZATIONS: Water quality certification or a waiver, as required under Section 401 of the Clean Water Act from the Central Valley Regional Water Quality Control Board (CVRWQCB) is required for this project. The applicant has applied for certification. The applicant has stated that they will develop a Water Quality Monitoring Plan for review by the CVRWQCB prior to any in reservoir construction work.

In addition, an application for a National Pollutant Discharge Elimination System (NPDES) Permit will be submitted to the CVRWQCB. Discharges that could affect the quality of the waters of the State, other than into a community sewer system, require NPDES permits and the development of a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP will be prepared by the applicant's construction contractor and will incorporate measures to control sediment and on-site spills, use eco-friendly Best Management Practices (BMPs) and prevent spills. If there is a failure of BMPs, the SWPPP will contain provisions for a visual monitoring program and a chemical monitoring program for pollutants that are non-visible.

Finally, prior to construction, the applicant will seek authorization for the project from the California Department of Fish and Game in a Lake or Streambed Alteration Agreement under Section 1602 of the Fish and Game Code.

HISTORIC PROPERTIES: Based on the available information, including the applicant's Folsom Dam Safety and Flood Damage Reduction Final EIS/EIR, potentially eligible cultural resources may be affected by the proposed project. Following release of the Final EIS in March of 2007, the applicant reduced the footprint of the project to avoid any potential eligible properties. On June 8, 2007 the applicant initiated consultation with the State Historic Preservation Officer (SHPO) under Section 106 of the National Historic Preservation Act, stating that they do not believe the proposed project would have an effect on historic properties within the project area. The SHPO has requested additional information from the applicant. Information regarding the cultural resources study is provided in the Folsom DS/FDR EIS/EIR.

ENDANGERED SPECIES: The proposed activity may affect Federally-listed endangered or threatened species or their critical habitat. Formal consultation with the U.S. Fish and Wildlife Service (USFWS) has been completed pursuant to Section 7 of the Endangered Species Act. A Biological Opinion with an Incidental Take Statement for three listed species was issued April, 2007.

The following endangered species may be present in the permit area:

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*): This species is federally listed as threatened. Critical habitat has been designated for this species, but does not include the project area. Although the presence of the elderberry beetle has not been confirmed in the area, there are 140 elderberry shrubs (*Sambucus sp.*), the beetle's sole host plant, with stems measuring 1.0 inch or greater in diameter at ground level in the project area.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). Vernal Pool Tadpole Shrimp (*Lepidurus packardii*). The applicant biologists are currently surveying the vernal pool habitat per the USFWS guidelines; however, wet season surveys have not been completed yet. Therefore, the applicant and the USFWS are assuming presence of vernal pool crustaceans in all 0.03 acre of habitat within the project area that will be filled.

ESSENTIAL FISH HABITAT: The proposed project will not adversely affect Essential Fish Habitat (EFH) as defined in the Magnuson-Stevens Fishery Conservation and Management Act.

The above determinations are based on information provided by the applicant and our preliminary review.

EVALUATION FACTORS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the described activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the described activity, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the described activity will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. The activity's impact on the public interest will include application of the Section 404(b)(1) guidelines promulgated by the Administrator, Environmental Protection Agency (40 CFR Part 230).

The Corps is soliciting comments from the public, Federal, State, and local agencies and officials, Indian tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SUBMITTING COMMENTS: Written comments, referencing Public Notice SPK-2007-01068 must be submitted to the office listed below on or before September 17, 2007.

Lisa M. Gibson, Project Manager
US Army Corps of Engineers, Sacramento District
Sacramento Office
1325 J Street, Room 1480
Sacramento, California 95814 2922
Email: lisa.m.gibson@spk01.usace.army.mil

The Corps is particularly interested in receiving comments related to the proposal's probable impacts on the affected aquatic environment and the secondary and cumulative effects. Anyone may request, in writing, that a public hearing be held to consider this application. Requests shall specifically state, with particularity, the reason(s) for holding a public hearing. If the Corps determines that the information received in response to this notice is inadequate for thorough evaluation, a public hearing may be warranted. If a public hearing is warranted, interested parties will be notified of the time, date, and location. Please note that all comment letters received are subject to release to the public through the Freedom of Information Act. If you have questions or need additional information please contact the applicant or the Corps' project manager Lisa M. Gibson, 916-557 5288, lisa.m.gibson@usace.army.mil.

Attachments: 6 figures